

**Upper Colorado River Endangered Fish Recovery Program
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**Nonnative Fish Management
Questions and Answers – 2006 (Utah)**

What is the Upper Colorado River Endangered Fish Recovery Program?

Established in 1988, the Recovery Program is a voluntary, cooperative partnership involving state and federal agencies, environmental groups and water and power user organizations in Colorado, Utah and Wyoming. Its purpose is to recover the endangered humpback chub (*Gila cypha*), bonytail (*Gila elegans*), Colorado pikeminnow (*Ptychocheilus lucius*), and razorback sucker (*Xyrauchen texanus*) while water development proceeds in accordance with federal and state laws.

How will recovery of the endangered fishes affect present and future water development?

Progress toward recovery of the endangered fishes enables use and development of water from the Upper Colorado River Basin to proceed in compliance with the Endangered Species Act (ESA). Since 1988, recovery actions implemented by the Recovery Program have provided ESA compliance for 862 water projects depleting approximately 2.1 million acre-feet of water in the Upper Basin. Status of fish populations, as well as recovery actions such as flow management, habitat restoration, nonnative fish management, and stocking endangered fishes are the measures the U.S. Fish and Wildlife Service uses to determine if progress toward recovery of the endangered fish is sufficient to allow the Recovery Program to continue to provide ESA compliance for water use and development.

Why should anyone care about saving the endangered fishes?

These “big-river” fishes evolved 3-5 million years ago and are found in the Colorado River Basin and nowhere else in the world. They are part of our cultural heritage and southwestern lore and were once so abundant that American Indians and early settlers relied on them for food.

Scientific research has shown that losing one species in an ecosystem can cause a chain reaction affecting a series of other living things. Because the endangered Colorado River fishes have evolved over millions of years and survived significant changes in the river system, biologists consider them “indicator species.” Like the coal-miner’s canary, whose death forewarns workers of toxic gases underground, the decline of these fish species may be a warning that other native species of the Colorado River ecosystem also are at risk.

Why should anyone care about saving the endangered fishes? (continued)

An endangered species is one that is “in danger” of extinction throughout all, or a large portion of, its habitat. Because these fishes are so rare, they are protected by state laws and the federal Endangered Species Act (ESA). In passing the ESA, Congress reflected society’s belief that rare species should be saved whenever possible.

Why are these fish species endangered?

Numerous changes in the river environment since the early 1900s affected certain native plants and animals. Among those changes, the installation of dams, removal of water for human use, and introduction of nonnative sport fishes like northern pike, bass and catfish have contributed to the decline of native fish species.

What needs to be done to recover the endangered fishes?

As the Department of the Interior agency responsible for administering the Endangered Species Act, the U.S. Fish and Wildlife Service has prepared recovery goals that identify site-specific management actions to minimize or remove threats and specify the numbers of fish required for self-sustaining populations. The recovery goals identify nonnative fishes in the Colorado River system as one of the major threats to the endangered fishes. The goals detail actions to minimize impacts from nonnative fishes including reducing their numbers through removal and relocation. In other cases, installing fish screens may be sufficient to prevent escapement of nonnative fishes from ponds and reservoirs into the river where they might interact with the endangered fishes.

Nonnative fish management is only one piece of the recovery puzzle. Recovery efforts are also underway to provide river flows, restore habitat, construct fish ladders, produce and stock endangered fish, and monitor results.

Downlisting of the fishes from “endangered” to “threatened” and removing the species from Endangered Species Act protection (delisting) will be considered once the necessary management actions are achieved and the fish populations have met recovery goal criteria.

What are the nonnative fish species of primary concern?

Although there are more than 40 nonnative fish species in the Upper Colorado River Basin, northern pike (*Esox lucius*), smallmouth bass (*Micropterus dolomieu*), and channel catfish (*Ictalurus punctatus*) are the species considered to pose the greatest threat to the endangered fishes.

Why are these particular species targeted for research and removal?

The Colorado River system only has enough space and food to support a certain number of aquatic species. During the last century, the introduction of nonnative fishes, combined with changes in river habitat, has led to an imbalance in the river system, creating a situation where

Why are these particular species targeted? (continued)

the nonnative fishes are preying upon native fish and in some cases out-competing them for food and space. Native fish populations suffer as a result.

Biologists believe northern pike, smallmouth bass, and channel catfish pose a significant threat to the endangered fishes. All three species are known to eat other fish. Since introduction into the Colorado River Basin, their range has expanded to overlap with that of the endangered fishes, resulting in increased potential for negative interactions. These nonnative species are active predators and will consume relatively large prey, including endangered fishes.

The three target species have replaced Colorado pikeminnow as the top predator of the Upper Colorado River Basin and now dominate portions of the system. The abundance and range of these nonnative species continues to increase.

Other nonnative species are not included in this experiment because, for various reasons, biologists believe they pose less of a threat to endangered fishes than the targeted species. Some of the introduced nonnative species have not flourished in the system and are rarely encountered. Others may be common to abundant in localized habitats where they do not interact with the endangered fishes on a large scale.

Species that do not eat fish may compete for food and space with endangered fish.

Some nonnative fish species are abundant and widespread, but only grow to two inches in length. Although they may feed on fish eggs and larvae, they are too small to eat the larger endangered fishes.

What is the Recovery Program doing to reduce the threat of nonnative fishes to the endangered fishes?

The Recovery Program is implementing several management actions intended to reduce the threat of nonnative fishes to the endangered fishes. This includes research to identify the levels of management needed to achieve and sustain recovery.

Starting in late-March through September 2006, biologists will work in 740 miles of the Colorado, Yampa, Green, White, and Dachesne rivers in the states of Colorado and Utah. Depending on the river reach, they will target smallmouth bass, channel catfish (only in Yampa Canyon and the Dachesne River) and/or northern pike for removal and relocation to area fishing ponds wherever appropriate and practical.

The Recovery Program continues to consider other nonnative fish management options which include screening reservoir outlets, berming ponds to prevent nonnative fishes from escaping into rivers, developing agreements with the states of Colorado and Utah to regulate all stocking of nonnative fishes, and changing state bag and possession limits to increase harvest.

How will the results be evaluated?

Continued sampling will determine if management efforts have reduced the numbers of nonnative fishes in sections where they were removed. Monitoring of endangered and other native fishes will determine if Recovery Program activities, which include nonnative fish management, result in increased numbers of endangered fishes. This information will help identify the level of management needed to minimize the threat of nonnative fishes to the endangered fishes to satisfy criteria necessary to recover these species. An annual assessment of data will determine future nonnative fish management actions.

What organizations will conduct the nonnative fish research and management activities on the ground?

Three of the Recovery Program partners – the states of Colorado and Utah and the U.S. Fish and Wildlife Service – will conduct nonnative fish research and management activities in the field. Biologists from Colorado State University will also participate.

How long will this nonnative fish management research occur?

This research project began in 2003 in some sections of river. Data will be evaluated and decisions made after each year to determine future work, and project synthesis reports will be developed in 2007 to assess progress.

When and where will work occur in 2006?

Work will take place from late-March through September in 740 miles of river in the Upper Colorado River Basin. Specific river reaches include the:

- Yampa River from Stagecoach Reservoir (south of Steamboat Springs, Colorado) downstream to the Green River confluence in Dinosaur National Monument
- Colorado River from Rifle, Colorado, and the Westwater boat landing near the Colorado-Utah state line
- White River from Taylor Draw Dam near Rangely, Colorado, to the Green River confluence
- Green River from Brown's Park to Swaseys Beach (north of Green River, Utah)
- Duchesne River from Myton Diversion (between Duchesne and Roosevelt, Utah) to the Green River confluence

These sections of river were selected because they provide important habitat for the recovery of the endangered fishes, and/or they are source areas of target species.

What will happen to the nonnative fishes that are removed?

On the first trip between Echo Park and Swaseys Beach on the Green River, smallmouth bass will be marked and returned to the river in an effort to identify how far they travel within critical habitat and to calculate the size of the population. During subsequent trips in that river reach, as well as in all other sections of the Green River, all targeted nonnative fishes will be euthanized. Fish are not relocated to other waters to prevent transferring aquatic diseases from the rivers to other bodies of water. Utah adheres to fish disease control rules and policies that prohibit fish transfers between water bodies without prior health certification. Certifying fish populations in large rivers as disease free would be nearly impossible.

The only exception to the above is on the Duchesne River, from the Myton Diversion to the Green River confluence. This reach is on the Uintah and Ouray Indian Reservation. The reservation is subject to Ute tribal law and the Ute Indians are not bound by Utah state policies which seek to prevent the transfer of aquatic diseases from one body of water to another.

Will nonnative fish management reduce sportfishing opportunities in the Colorado River Basin?

In general, there will be little impact on northern pike fishing. In 2005, 72 northern pike were removed. This is a very small fish population in the Green River. If management efforts are successful, abundance and distribution of smallmouth bass will be reduced.

Why were nonnative fish species introduced into the Colorado River system?

Sixty-seven nonnative fish species have been introduced into the Colorado River Basin since the 1880s. At least 36 fish species, mostly game fishes from the eastern United States, were introduced between 1930 and 1950. Many of the species were intentionally introduced by state and federal agencies to address public demand for sportfishing opportunities during that time. Other nonnative species were introduced to provide food for the game species.

Unintentional introductions occurred when some species, which had been intentionally stocked in ponds and reservoirs for sportfishing, subsequently escaped into the river system. Some of these escapees successfully established self-sustaining populations in areas occupied by native fishes.

Why are some of the same agencies that introduced nonnative fishes to the river system now working to remove them?

Up until the mid-twentieth century the public's values and priorities did not emphasize preservation of native species and the environment. Over time, society's attitudes toward native species and their environments changed. In 1973, the federal Endangered Species Act (ESA) was signed into law. The ESA represents America's concern about the decline of many wildlife species. Its purpose is to conserve and recover species and the ecosystems on which they depend.

Why are some of the same agencies that introduced nonnative fishes to the river system now working to remove them? (continued)

Since passage of the ESA and other environmental laws, state and federal governments have responsibilities for both endangered species and sportfish management. The agencies are charged with addressing impacts of nonnative fishes on endangered fishes.

Will nonnative fish research and management benefit other native fish species?

Biologists believe that nonnative fish management will also benefit other native fish species such as the roundtail chub, bluehead sucker, flannelmouth sucker and speckled dace. Rapidly increasing numbers of nonnative fish currently dominate the Upper Colorado River system resulting in a decline of the native species. By working proactively to maintain balance in the river system, it is hoped that these native fish species will not require state or federal protection as threatened or endangered.

Where can I get more information?

Upper Colorado River Endangered Fish Recovery Program
(Website: coloradoriverrecovery.fws.gov)

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Where can I get more information? (continued)

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